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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/004,723

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EXAMINER

CHANG, RICHARD

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/004,723

Applicant(s)

FORSSELL, MIKA

Examiner

Richard Chang

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's arguments and amendments, filed on 03/20/2007, with respect to claims 1-20 and 22-42 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim 21 has been canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6, 10-12, 14-15, 19, 29-30 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,119,000 ("Stephenson et al.") in view of US patent 5,832,381 ("Kauppi").

Regarding claims 1, 11, 29 and 36, Stephenson et al. teach a system and method for mobile station (12) changing from a current cell to a new cell in a radio

network (N1) (a method for dynamic tracking of mobile station in a wireless network)
(see Fig. 1), comprising of

entering the new cell (from C1 to C2) (See Fig. 2),
generating a cell change packet data unit (location update request IMSI)
message for informing the network (M1) of the location of the mobile station (12) in the
new cell (C2) (See Fig. 4, Col. 7, line 33-45),

preparing a cell change PDU message (IMSI) once detecting the mobile station
has entered the new cell (C2), and transmitting the once acknowledged back that the
mobile station entered the new cell (C2) (as highest priority to register the new location
to enable proper data routing in the new cell C2 in wireless network N1) (See Fig. 1,
Col. 6, line 26-33).

Stephenson et al. teaches substantially all the claimed invention but did not
disclose expressly the particular application or detailed example involving limitations of
"buffering the cell change PDU message into a PDU transmit queue before any
buffered PDUS that were present before the mobile station entered the new cell and
transmitting the buffered cell change PDU before any of the buffered PDUS that were
present before the mobile station entered the new cell".

Kauppi teaches a location updating method in a cellular radio network wherein
once the mobile station (MS) observes a cell change (C1 to C2), the MS prepares a
Location Update Request message (cell change PDU message) with highest priority
than any data unit ready for transmission in order to initiate location change update in
the new area by transmitting the Location Update Request message once the

comparison process for identifying the cell move is accurate (See Fig. 1, Col. 6, line 61 to Col. 8, line 14).

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Kauppi with Stephenson et al. in order to obtain a method for dynamic tracking of mobile station in a wireless network and to take advantage of preparing the MS Location Update Request message once the mobile station observes a cell change update with highest priority than any data unit ready for transmission in order to initiate location change in the new area by transmitting the Location Update Request message once the comparison process for identifying the cell move is accurate.

The motivation to do so would have been to preparing the highest priority MS Location Update Request message upon the observation a cell change and initiate location change update sequence in the new area by transmitting the Location Update Request message once the comparison process for identifying the cell move is accurate, as suggested by Kauppi in Col. 6, line 61 to Col. 8, line 14.

Regarding claims 2, 12, 30 and 37, Stephenson et al. further teaches that a preliminary step of requesting an uplink resource for transmitting the cell change PDU (IMSL) (See Fig. 4, Col. 7, line 33-45).

Regarding claim 4, Stephenson et al. further teaches that in response to receiving the cell change PDUS (IMSI-MM) transmits downlink PDUS (New LAI) for the mobile station into the new cell (See Fig. 4, Col. 7, lines 33-45).

Regarding claims 5 and 14, Stephenson et al. further teaches that there is a predetermined threshold to control whether to delete the message or instead (See Col. 17, lines 21-30).

Regarding claims 6 and 15, Stephenson et al. further teaches that a General Packet Radio Service (GPRS) network, wherein the PDUS are Logical Link Control (LLC) PDUS, and where the cell change LLC PDU has a length that fits within one Radio Link Control data block (LI field indicates) (See Fig. 5, Col. 10, line 61 – Col. 11, line 7).

Regarding claims 10, 19 and 35, t Stephenson et al. further teaches that setting a priority level of the cell change PDU such that the step of buffering the cell change PDU message (IMSI) into the PDU transmit queue causes the cell change PDU to be transmitted before any lower priority PDUs (at setup level priority) (See Fig. 4, item 4, Col. 7, line 33-45).

4. Claims 3, 7-9, 13, 16-18, 20-23, 24-28, 31-34 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,119,000 ("Stephenson et al.") in view of US patent 5,832,381 ("Kauppi") and further in view of US patent application publication US 2002/0082033 A1 ("Lohtia et al.").

Regarding Claims 7, 16, 20, 22, 25, 32 and 36, as discussed above, Stephenson et al. and Kauppi teach substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

"prior to the SGSN receiving a communication from the MS, notifying the SGSN of the MS cell change".

Lohtia et al. teach a GPRS based uplink/downlink packet radio communication method including MS and SGSN both with LLC, RLC/MAC layer functions wherein SGSN manages communication in the coverage area for the MS's cell change (See Fig. 1, page 2, paragraph [0020]).

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Lohtia et al. with Stephenson et al. and Kauppi in order to obtain a method for dynamic tracking of mobile station in a wireless network and to take advantage of that the SGSN manages communication in the coverage area for the MS's cell change.

The motivation to do so would have been to have the SGSN manages communication in the coverage area for the MS's cell change, as suggested by Lohtia et al. in page 2, paragraph [0020].

Regarding claims 3, 13, 31 and 38, as discussed above, Stephenson et al. and Kauppi teach substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

"a preliminary step of requesting an uplink Temporary Block Flow for transmitting the cell change PDU".

Lohtia et al. further teaches that a preliminary step of requesting an uplink Temporary Block Flow (uplink TBF timeslot) for transmitting the cell change PDU change (See Fig. 1, page 2, paragraph [0024-0026]).

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Lohtia et al. with Stephenson et al. and Kauppi in order to obtain a method for dynamic tracking of mobile station in a wireless network and to take advantage of that a preliminary step of requesting an uplink Temporary Block Flow timeslot for transmitting the cell change PDU.

The motivation to do so would have been to have a preliminary step of requesting an uplink Temporary Block Flow timeslot for transmitting the cell change PDU, as suggested by and Lohtia et al. in page 2, paragraph [0024-0026].

Regarding claims 8-9, 17-18, 22-23, 33-34 and 40-41, as discussed above, Stephenson et al. and Kauppi teach substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“a Radio Link Control/Medium Access Control (RLC/MAC) unit initiates an uplink Temporary Block Flow (TBF) in the new cell, and indicates to a RLC/MAC of the network if an ACK or an UNACK RLC mode is to be used when transmitting the cell change PDU, wherein the RLC/MAC unit of the mobile station selects either the ACK or the UNACK RLC mode based on the RLC mode of a next queued LLC PDU in the transmit queue”.

Lohtia et al. further teaches that the RLC/MAC unit of the mobile station operates either the ACK or the NACK mode based on the RLC mode and transmit a PACKET CONTROL ACK message and release the TBF (See page 2, paragraph [0028-0029].

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Lohtia et al. with Stephenson et al. and Kauppi in order to obtain a method for dynamic tracking of mobile station in a wireless network and to take advantage of the RLC/MAC unit of the mobile station with the ACK or the NACK mode and a PACKET CONTROL ACK message for release of the TBF.

The motivation to do so would have been to have a RLC/MAC unit of the mobile station with the ACK or the NACK mode and a PACKET CONTROL ACK message for release of the TBF, as suggested by and Lohtia et al. in page 2, paragraph [0028-0029].

Regarding claim 21, Stephenson et al. further teaches that the communication is comprised of at least one of a Packet Data Unit (IMSI-MM) and a message (new LAI) (See Col. 7, line 33-45).

Regarding claim 24, Stephenson et al. further teaches that notifying occurs in response to the MS (12) being assigned a TDMA frame number (time slot) of when to make the cell change (See Fig. 10, Col. 15, lines 51-67).

Regarding claim 26, these claims have limitations that is similar to those of claim 20 and Stephenson et al. further teaches that notifying occurs in response to the network receiving a Temporary Logical Link Identifier (IMSI) from the MS (12) (See Fig. 4, Col. 7, line 33-45).

Regarding claim 27, Stephenson et al. further teaches that method for organizing packet data units into a transmit queue, comprising of

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passing a PDU to a Radio Link Control (RLC) unit, the PDU having a flag (indicative number) for indicating a priority of the PDU relative to other PDUS, storing the PDU into the transmit queue in accordance with the indicated priority, and transmitting the stored PDU to a radio channel before any stored PDUS having a lower priority (See Fig. 3, Col. 10, line 53 to Col. 11, line 10) , thus it is rejected with the same rationale applied against claim 20 above.

Regarding claim 28 and 42, Stephenson et al. further teaches that the RLC unit is associated with a mobile station, where the PDU is a cell change PDU, and where the cell change PDU is assigned a highest priority (to set up routing table for following PDU's in the new cell C2) (See Col. 7, line 33-45).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rk

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Richard Chang
Patent Examiner
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